

No.

9200173



# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

**Northrup King Co.**

Whereas, THERE HAS BEEN PRESENTED TO THE  
**Secretary of Agriculture**

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT (U.S.C. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'S38-83'

In Testimony Whereof, I have hereunto set  
my hand and caused the seal of the Plant  
Variety Protection Office to be affixed  
at the City of Washington, D.C.  
this 30th day of September in  
the year of our Lord one thousand nine  
hundred and ninety-four.

Attest:

*Kenneth H. Evans*  
Commissioner

Plant Variety Protection Office  
Agricultural Marketing Service

*Uike Esq*  
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE

# APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) (as it is to appear on the Certificate) Northrup King Co.		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NO.	3. VARIETY NAME S38-83
4. ADDRESS (street and no. or R.F.D. no., city, state, and ZIP) P. O. Box 959 949 Minneapolis, MN 55440 Washington, IA 52353		5. PHONE (Include area code) <del>612-593-7333</del> 319-653-2181	<b>FOR OFFICIAL USE ONLY</b> VPPO NUMBER 9200173 Filing and Examination Fee: \$ 2,150.00 Date: Apr. 29, 1992 Certificate Fee: \$ 250.00 Date: Sept. 13, 1994
6. GENUS AND SPECIES NAME Glycine max	7. FAMILY NAME (Botanical) Leguminosae		
8. CROP KIND NAME (Common Name) Soybean	9. DATE OF DETERMINATION September, 1989		
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) Corporation			
11. IF INCORPORATED, GIVE STATE OF INCORPORATION Delaware		12. DATE OF INCORPORATION 1976	

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS  
~~Robert W. Romig~~ John Thorne, Ph.D.  
 Northrup King Co.  
 P. O. Box 959 949  
 Minneapolis, MN 55440 Washington, IA 52353

FAX: 319-653-4609  
319-653-2181  
PHONE (Include area code): ~~612-593-7305~~

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow INSTRUCTIONS on reverse)

a. ☒ Exhibit A, Origin and Breeding History of the Variety  
 b. ☒ Exhibit B, Novelty Statement.  
 c. ☒ Exhibit C, Objective Description of Variety.  
 d. ☐ Exhibit D, Additional Description of Variety.  
 e. ☒ Exhibit E, Statement of the Basis of Applicant's Ownership.  
 f. ☒ Seed Sample (2,500 viable untreated seeds). Date Seed Sample mailed to Plant Variety Protection Office \_\_\_\_\_  
 g. ☒ Filing and Examination Fee (\$2,150) made payable to "Treasurer of the United States."

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See section 83(a) of the Plant Variety Protection Act.)  
☐ YES (If "YES," answer items 16 and 17 below) ☒ NO (If "NO," skip to item 18 below)

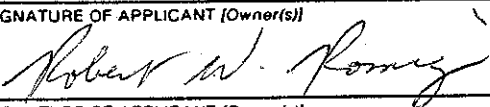
16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?  
☐ YES ☒ NO

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?  
☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?  
☐ YES (If "YES," through ☐ Plant Variety Protection Act ☐ Patent Act. Give date. \_\_\_\_\_)  
☒ NO

19. HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETING IN THE U.S. OR OTHER COUNTRIES?  
☐ YES (If "YES," give names of countries and dates)  
☒ NO

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.  
 The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in section 41, and is entitled to protection under the provisions of section 42 of the Plant Variety Protection Act.  
 Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT (Owner(s)) 	CAPACITY OR TITLE Vice President Research	DATE April 27, 1992
SIGNATURE OF APPLICANT (Owner(s))	CAPACITY OR TITLE	DATE

## EXHIBIT A

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## Origin and Breeding History of the Variety

The soybean variety 'S38-83' is derived from the cross 'S44-77' x 'A3127'. The cross was made in February of 1984 by the Northrup King Co. soybean research staff at Waimea, Kauai, HI. The F1 generation was grown at the Northrup King Co. Research Center at St. Joseph, IL in the summer of 1984. The F2 and F3 generations were grown at Waimea in the winter of 1984-85, and the F4 at St. Joseph in the summer of 1985. The F2 and F3 generations were advanced by harvesting 2-4 seeds from each plant and planting a 600 seed sample from the bulk. In the fall of 1985 approximately 150 random F4 plants were harvested and threshed individually. The progeny from these plants were grown in F5 progeny rows in the summer of 1986. One of these, numbered J604539, was selected on the basis of agronomic appearance to be tested in a preliminary yield trial in 1987. This line was subsequently tested under the temporary designation X9138 and named S38-83. It has been tested at several midwestern U.S. locations from 1988 to 1991 and found to yield well compared to other Maturity Group III cultivars. Descriptive traits including purple flowers, grey pubescence, tan pods, and imperfect black hilum have been identified and confirmed. S38-83 was tested in the field for iron-deficiency chlorosis at test sites in Northern Iowa by Iowa State University in 1991 and found to be susceptible. It has been tested for reaction to Races 1, 3, 4, and 7 of Phytophthora megasperma using hypocotyl inoculation of greenhouse grown plants and found to have the Rps 1-C gene for resistance.

In the winter of 1988-89, 300 seeds of S38-83 were planted at Waimea. At harvest, 100 plants were harvested and threshed individually and their progeny planted at St. Joseph in the summer of 1989 to monitor variability and to produce Pedigree Seed. A few plants with white flowers or tawny pubescence were removed. These plants were assumed to have come from admixture or out-crossing. Uniform rows were bulked to produce Pedigree Seed. This seed was planted in 1990 to produce Breeder Seed. The increase block was rogued carefully during flowering and at maturity.

Foundation Seed of S38-83 was produced in 1991. The Iowa Crop Improvement Association inspected the field and found it to meet the standards for Foundation Seed. The National Soybean Variety Review Board approved the variety for Certification on December 12, 1991.

S38-83 is a stable and uniform variety except for minor environmentally induced variation encountered in any soybean variety. In five years of testing and three years of seed increase, no other variants have been observed. Any off-type plants which were removed from increase fields were assumed to have arisen from admixture or outcrossing.

Varietal purity will be maintained using progeny rows as described above as needed.

**EXHIBIT B**

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**Novelty Statement for the Variety**

Soybean variety S38-83 is most similar to Pioneer Brand 9391 and S42-30. It can be differentiated from these varieties on the basis of pubescence color. S38-83 has grey pubescence, while 9391 and S42-30 have tawny pubescence.

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
LIVESTOCK, MEAT, GRAIN & SEED DIVISION  
PLANT VARIETY PROTECTION OFFICE  
BELTSVILLE, MARYLAND 20705

EXHIBIT C  
(Soybean)

OBJECTIVE DESCRIPTION OF VARIETY  
SOYBEAN (*Glycine max* L.)

NAME OF APPLICANT(S) Northrup King Co.	TEMPORARY DESIGNATION J604539, X9138	VARIETY NAME
ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code) P. O. Box 959 Minneapolis, MN 55440 Attention R. W. Romig		FOR OFFICIAL USE ONLY PVPO NUMBER 9200173

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g., ).

## 1. SEED SHAPE:



1 = Spherical (L/W, L/T, and T/W ratios =  $\leq 1.2$ )  
3 = Elongate (L/T ratio  $> 1.2$ ; T/W =  $\leq 1.2$ )

2 = Spherical Flattened (L/W ratio  $> 1.2$ ; L/T ratio =  $\leq 1.2$ )  
4 = Elongate Flattened (L/T ratio  $> 1.2$ ; T/W  $> 1.2$ )

## 2. SEED COAT COLOR: (Mature Seed)

1 = Yellow      2 = Green      3 = Brown      4 = Black      5 = Other (Specify) \_\_\_\_\_

## 3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

1 = Dull ('Corsoy 79'; 'Braxton')      2 = Shiny ('Nebsoy'; 'Gasoy 17')

## 4. SEED SIZE: (Mature Seed)

Grams per 100 seeds

## 5. HILUM COLOR: (Mature Seed)

1 = Buff      2 = Yellow      3 = Brown      4 = Gray      5 = Imperfect Black      6 = Black      7 = Other (Specify) \_\_\_\_\_

## 6. COTYLEDON COLOR: (Mature Seed)

1 = Yellow      2 = Green

## 7. SEED PROTEIN PEROXIDASE ACTIVITY:

1 = Low      2 = High

## 8. SEED PROTEIN ELECTROPHORETIC BAND:

1 = Type A (SP1<sup>a</sup>)      2 = Type B (SP1<sup>b</sup>)

## 9. HYPOCOTYL COLOR:

1 = Green only ('Evans'; 'Davis')      2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')  
3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')  
4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

## 10. LEAFLET SHAPE:

1 = Lanceolate      2 = Oval      3 = Ovate      4 = Other (Specify) \_\_\_\_\_

## 11. LEAFLET SIZE:

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2

1 = Small ('Amsoy 71'; 'A5312')

2 = Medium ('Corsoy 79'; 'Gasoy 17')

3 = Large ('Crawford'; 'Tracy')

## 12. LEAF COLOR:

2

1 = Light Green ('Weber'; 'York')

2 = Medium Green ('Corsoy 79'; 'Braxton')

3 = Dark Green ('Gnome'; 'Tracy')

## 13. FLOWER COLOR:

2

1 = White

2 = Purple

3 = White with purple throat

## 14. POD COLOR:

1

1 = Tan

2 = Brown

3 = Black

## 15. PLANT PUBESCENCE COLOR:

1

1 = Gray

2 = Brown (Tawny)

## 16. PLANT TYPES:

3

1 = Slender ('Essex'; 'Amsoy 71')

2 = Intermediate ('Amcor'; 'Braxton')

3 = Bushy ('Gnome'; 'Govan')

## 17. PLANT HABIT:

3

1 = Determinate ('Gnome'; 'Braxton')

2 = Semi-Determinate ('Will')

3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

## 18. MATURITY GROUP:

6

1 = 000

2 = 00

3 = 0

4 = I

5 = II

6 = III

7 = IV

8 = V

9 = VI

10 = VII

11 = VIII

12 = IX

13 = X

## 19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

## BACTERIAL DISEASES:

☐Bacterial Pustule (*Xanthomonas phaseoli* var. *sojensis*)☐Bacterial Blight (*Pseudomonas glycinea*)☐Wildfire (*Pseudomonas tabaci*)

## FUNGAL DISEASES:

☐Brown Spot (*Septoria glycines*)Frogeye Leaf Spot (*Cercospora sojina*)☐

Race 1

☐

Race 2

☐

Race 3

☐

Race 4

☐

Race 5

☐

Other (Specify)

☐Target Spot (*Corynespora cassiicola*)☐Downy Mildew (*Peronospora trifoliorum* var. *manshurica*)☐Powdery Mildew (*Microsphaera diffusa*)☐Brown Stem Rot (*Cephalosporium gregatum*)☐Stem Canker (*Diaporthe phaseolorum* var. *caulivora*)

5

## 19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

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## FUNGAL DISEASES: (Continued)

<input checked="checked" type="checkbox"/> 1	Pod and Stem Blight ( <i>Diaporthe phaseolorum</i> var. <i>sojae</i> )												
<input checked="checked" type="checkbox"/> 1	Purple Seed Stain ( <i>Cercospora kikuchii</i> )												
<input type="checkbox"/>	Rhizoctonia Root Rot ( <i>Rhizoctonia solani</i> )												
Phytophthora Rot ( <i>Phytophthora megasperma</i> var. <i>sojae</i> )													
<input checked="checked" type="checkbox"/> 2	Race 1	<input checked="checked" type="checkbox"/> 2	Race 2	<input checked="checked" type="checkbox"/> 2	Race 3	<input checked="checked" type="checkbox"/> 1	Race 4	<input type="checkbox"/>	Race 5	<input type="checkbox"/>	Race 6	<input checked="checked" type="checkbox"/> 2	Race 7
<input type="checkbox"/>	Race 8	<input type="checkbox"/>	Race 9	<input type="checkbox"/>	Other (Specify) _____								

## VIRAL DISEASES:

<input type="checkbox"/>	Bud Blight (Tobacco Ringspot Virus)
<input type="checkbox"/>	Yellow Mosaic (Bean Yellow Mosaic Virus)
<input type="checkbox"/>	Cowpea Mosaic (Cowpea Chlorotic Virus)
<input type="checkbox"/>	Pod Mottle (Bean Pod Mottle Virus)
<input type="checkbox"/>	Seed Mottle (Soybean Mosaic Virus)

## NEMATODE DISEASES:

Soybean Cyst Nematode ( <i>Heterodera glycines</i> )											
<input type="checkbox"/>	Race 1	<input type="checkbox"/>	Race 2	<input type="checkbox"/>	Race 3	<input checked="checked" type="checkbox"/> 1	Race 4	<input checked="checked" type="checkbox"/> 1	Other (Specify) _____		
<input type="checkbox"/>	Lance Nematode ( <i>Hoplolaimus Colombus</i> )										
<input type="checkbox"/>	Southern Root Knot Nematode ( <i>Meloidogyne incognita</i> )										
<input type="checkbox"/>	Northern Root Knot Nematode ( <i>Meloidogyne Hapla</i> )										
<input type="checkbox"/>	Peanut Root Knot Nematode ( <i>Meloidogyne arenaria</i> )										
<input type="checkbox"/>	Reniform Nematode ( <i>Rotylenchulus reniformis</i> )										
<input type="checkbox"/>	OTHER DISEASE NOT ON FORM (Specify): _____										

## 20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

<input checked="checked" type="checkbox"/> 1	Iron Chlorosis on Calcareous Soil
<input type="checkbox"/>	Other (Specify) _____

## 21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

<input type="checkbox"/>	Mexican Bean Beetle ( <i>Epilachna varivestis</i> )
<input type="checkbox"/>	Potato Leaf Hopper ( <i>Empoasca fabae</i> )
<input type="checkbox"/>	Other (Specify) _____

## 22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape	Pioneer Brand 9391	Seed Coat Luster	S44-77
Leaf Shape	Fayette	Seed Size	9391
Leaf Color	9391	Seed Shape	S44-77
Leaf Size	9391	Seedling Pigmentation	S29-39

## 23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

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VARIETY	NO. OF DAYS MATURITY	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/POD
				CM Width	CM Length	% Protein	% Oil		
Submitted	133	2.6	96	7.2	11.3	39.0	22.7	16.1	2-4
9391 Name of Similar Variety	134	2.6	99	7.0	11.1	39.0	22.5	16.2	2-4

## PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A<sub>2</sub> in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.



**EXHIBIT E**

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**Statement of the Basis of Applicant's Ownership**

Soybean variety S38-83 was developed by the Northrup King Co. soybean breeding staff from germplasm sources cited in Exhibit B of this application. Northrup King Co. believes that the variety is novel as defined in the Plant Variety Protection Act and, therefore, that Northrup King Co. is the sole owner of the variety.